Contents

Aho A-C, Donner K, Helenius S, Olesen Larsen L, Reuter T: Visual performance of the toad (*Bufo bufo*) at low light levels: retinal ganglion cell responses and prey-catching accuracy 671
Alkon DL → Höpp H-P
Angstadt JD, Friesen WO: Modulation of swimming behavior in the medicinal leech. I. Effects of serotonin on the electrical properties of swim-gating cell 204 223
Angstadt JD, Friesen WO: Modulation of swimming behavior in the medicinal leech. II. Ionic conductances underlying serotonergic modulation of swim-gating cell 204 235
Aoki K → Chiba A
Assad C → Rasnow B

Bambagioni D → Grassi S
Bando T: Discrimination of random dot texture patterns in bluegill sunfish, *Lepomis macrochirus* 663
Barry SR, Bernal J: Antimalarial drugs inhibit calcium-dependent backward swimming and calcium currents in *Paramecium calkinsi* 457
Barth FG → Schmitt A
Bastian J: The role of amino acid neurotransmitters in the descending control of electroreception 409
Bernal J → Barry SR
Bévengut M → Cattaert D
Bleckmann H, Zelick R: The responses of peripheral and central mechanosensory lateral line units of weakly electric fish to moving objects 115
Bleckmann H → Northcutt RG
Bodnar DA: Excitatory influence of wind-sensitive local interneurons on an ascending interneuron in the cricket cercal sensory system 641
Bower JM → Rasnow B
Bowmaker JK → Maier EJ
Bullock TH, Karamürsel S, Hofmann MH: Interval-specific event related potentials to omitted stimuli in the electrosensory pathway in elasmobranchs: an elementary form of expectation 501

Caldwell RL → Cronin TW
Canfield JG, Rose GJ: Activation of Mauthner neurons during prey capture 611
Caprio J → Michel WC
Cattaert D, Bévengut M, Clarac F: Synaptic connections between sensory afferents and the common inhibitory motoneuron in crayfish 71
Chiba A, Kikuchi M, Aoki K: The effects of pinealectomy and blinding on the circadian locomotor activity rhythm in the Japanese newt, *Cynops pyrrhogaster* 683
Chiel HJ → Morton DW
Christensen-Dalsgaard J, Narins PM: Sound and vibration sensitivity of VIIth nerve fibers in the frogs *Leptodactylus albilabris* and *Rana pipiens pipiens* 653
Claas B, Münz H, Görner P: Reaction to surface waves by *Xenopus laevis* Daudin. Are sensory systems other than the lateral line involved? 759
Clarac F → Cattaert D
Coles JA → Vallet AM
Collett TS: Do frogs use retinal elevation to measure the distance of a barrier? 109
Collett TS, Fry SN, Wehner R: Sequence learning by honeybees 693
Crawford JD: Central auditory neurophysiology of a sound-producing fish: the mesencephalon of *Pollimyrus isidori* (Mormyridae) 139
Cronin TW, Marshall NJ, Caldwell RL: Photoreceptor spectral diversity in the retinas of squilloid and lysiosquilloid stomatopod crustaceans 339
Cymborowski B, Gillanders SW, Hong S-F, Saunders DS: Phase shifts of the adult locomotor activity rhythm in *Calliphora vicina* induced by non-steroidal ecdysteroid agonist RH 5849 101

David JA, Pitman RM: The pharmacology of α-bungarotoxin-resistant acetylcholine receptors on a identified cockroach motoneurone 359
DeGrip WJ → Foster RG
Deitmer JW → Golowasch J
Donner K → Aho A-C
Dove S, Horwitz J, McFall-Ngai M: A biochemical characterization of the photophore lenses of the midshipman fish, *Porichthys notatus* Girard 565
Dryer SE, Henderson D: Cyclic GMP-activated channels of the chick pineal gland: Effects of divalent cations, pH, and cyclic AMP 271

Ferragamo M. → Simmons AM
Fonseca PJ: Directional hearing of a cicada: biophysical aspects 767
Foster RG, Garcia-Fernandez JM, Provencio I., DeGrip WJ: Opsin localization and chromophore retinoids identified within the basal brain of the lizard *Anolis carolinensis* 33
Friedel T → Schmitt A
Friesen WO → Angstadt JD
Fry SN → Collett TS

Garcia-Fernandez JM → Foster RG
Gillanders SW → Cymborowski B
Golowasch J, Deitmer JW: pH regulation in the stomatogastric ganglion of the crab *Cancer pagurus* 573
Görner P → Claas B
Grassi S, Bambagioni D, Ottaviani F, Serafini G: Acoustic structure of vocalization and stapedius muscle activity during vocal development in chickens (*Gallus gallus*) 473
Gwinner E → Zeman M

Harris-Warrick RM → Johnson BR
Hateren JH van: Three modes of spatiotemporal preprocessing by eyes 583
Hateren JH van → Jansonius NM
Hawryshyn CW → Parkyn DC
Helenius S → Aho A-C
Helversen D von: 'Absolute steepness' of ramps as an essential cue for auditory pattern recognition by a grasshopper (Orthoptera; Acrididae; *Chorthippus biguttulus L.*) 633
Henderson D → Dryer SE
Hofmann MH → Bullock TH
Hofmann M → Zippel HP
Hong S-F → Cymborowski B
Höpp H-P, Alkon DL: Different ionic conductances are modulated during the late receptor potential and the prolonged depolarizing afterpotential in *Hermissenda* type A photoreceptors 47
Horwitz J → Dove S

Jansonius NM, Hateren JH van: On-off units in the first optic chiasm of the blowfly. II. Spatial properties 467
Johnson BR, Peck JH, Harris-Warrick RM: Amine modulation of electrical coupling in the pyloric network of the lobster stomatogastric ganglion 715
Juusola M: Linear and non-linear contrast coding in light-adapted blowfly photoreceptors 511

Karamürsel S → Bullock TH
Kikuchi M → Chiba A
Knaust M → Zippel HP
Kohbara J → Michel WC

Landsman RE: The effects of captivity on the electric organ discharge and plasma hormone levels in *Gnathonemus petersii* (Mormyriformes) 619
Laughlin SB, Weckström M: Fast and slow photoreceptors – a comparative study of the functional diversity of coding and conductances in the Diptera 593
Lehrer M: Why do bees turn back and look? 549
Lehrer M, Wunderli M, Srinivasan MV: Perception of heterochromatic flicker by honeybees: a behavioural study 1
Levy M, Susswein MO, Susswein AJ: Respiratory pumping in *Aplysia fasciata* as part of an integrated defensive response to increases and decreases in seawater concentration 749
Lönnendonker U: Features effective in course control during object fixation by walking Colorado beetles 741
Luan Y → Zippel HP

Maier EJ, Bowmaker JK: Colour vision in the passeriform bird, *Leiothrix lutea:* correlation of visual pigment absorbance and oil droplet transmission with spectral sensitivity 295
Marshall NJ → Cronin TW
McClelland BE → Wilczynski W
McFall-Ngai M → Dove S
Meyer DL → Zippel HP

Contents

Aho A-C, Donner K, Helenius S, Olesen Larsen L, Reuter T: Visual performance of the toad (*Bufo bufo*) at low light levels: retinal ganglion cell responses and prey-catching accuracy 671
Alkon DL → Höpp H-P
Angstadt JD, Friesen WO: Modulation of swimming behavior in the medicinal leech. I. Effects of serotonin on the electrical properties of swim-gating cell 204 223
Angstadt JD, Friesen WO: Modulation of swimming behavior in the medicinal leech. II. Ionic conductances underlying serotonergic modulation of swim-gating cell 204 235
Aoki K → Chiba A
Assad C → Rasnow B

Bambagioni D → Grassi S
Bando T: Discrimination of random dot texture patterns in bluegill sunfish, *Lepomis macrochirus* 663
Barry SR, Bernal J: Antimalarial drugs inhibit calcium-dependent backward swimming and calcium currents in *Paramecium calkinsi* 457
Barth FG → Schmitt A
Bastian J: The role of amino acid neurotransmitters in the descending control of electroreception 409
Bernal J → Barry SR
Bévengut M → Cattaert D
Bleckmann H, Zelick R: The responses of peripheral and central mechanosensory lateral line units of weakly electric fish to moving objects 115
Bleckmann H → Northcutt RG
Bodnar DA: Excitatory influence of wind-sensitive local interneurons on an ascending interneuron in the cricket cercal sensory system 641
Bower JM → Rasnow B
Bowmaker JK → Maier EJ
Bullock TH, Karamürsel S, Hofmann MH: Interval-specific event related potentials to omitted stimuli in the electrosensory pathway in elasmobranchs: an elementary form of expectation 501

Caldwell RL → Cronin TW
Canfield JG, Rose GJ: Activation of Mauthner neurons during prey capture 611
Caprio J → Michel WC
Cattaert D, Bévengut M, Clarac F: Synaptic connections between sensory afferents and the common inhibitory motoneuron in crayfish 71
Chiba A, Kikuchi M, Aoki K: The effects of pinealectomy and blinding on the circadian locomotor activity rhythm in the Japanese newt, *Cynops pyrrhogaster* 683
Chiel HJ → Morton DW
Christensen-Dalsgaard J, Narins PM: Sound and vibration sensitivity of VIIth nerve fibers in the frogs *Leptodactylus albilabris* and *Rana pipiens pipiens* 653
Claas B, Münz H, Görner P: Reaction to surface waves by *Xenopus laevis* Daudin. Are sensory systems other than the lateral line involved? 759
Clarac F → Cattaert D
Coles JA → Vallet AM
Collett TS: Do frogs use retinal elevation to measure the distance of a barrier? 109
Collett TS, Fry SN, Wehner R: Sequence learning by honeybees 693
Crawford JD: Central auditory neurophysiology of a sound-producing fish: the mesencephalon of *Pollimyrus isidori* (Mormyridae) 139
Cronin TW, Marshall NJ, Caldwell RL: Photoreceptor spectral diversity in the retinas of squilloid and lysiosquilloid stomatopod crustaceans 339
Cymborowski B, Gillanders SW, Hong S-F, Saunders DS: Phase shifts of the adult locomotor activity rhythm in *Calliphora vicina* induced by non-steroidal ecdysteroid agonist RH 5849 101

David JA, Pitman RM: The pharmacology of α-bungarotoxin-resistant acetylcholine receptors on a identified cockroach motoneurone 359
DeGrip WJ → Foster RG
Deitmer JW → Golowasch J
Donner K → Aho A-C
Dove S, Horwitz J, McFall-Ngai M: A biochemical characterization of the photophore lenses of the midshipman fish, *Porichthys notatus* Girard 565
Dryer SE, Henderson D: Cyclic GMP-activated channels of the chick pineal gland: Effects of divalent cations, pH, and cyclic AMP 271

Ferragamo M. → Simmons AM
Fonseca PJ: Directional hearing of a cicada: biophysical aspects 767
Foster RG, Garcia-Fernandez JM, Provencio I., DeGrip WJ: Opsin localization and chromophore retinoids identified within the basal brain of the lizard *Anolis carolinensis* 33
Friedel T → Schmitt A
Friesen WO → Angstadt JD
Fry SN → Collett TS

Garcia-Fernandez JM → Foster RG
Gillanders SW → Cymborowski B
Golowasch J, Deitmer JW: pH regulation in the stomatogastric ganglion of the crab *Cancer pagurus* 573
Görner P → Claas B
Grassi S, Bambagioni D, Ottaviani F, Serafini G: Acoustic structure of vocalization and stapedius muscle activity during vocal development in chickens (*Gallus gallus*) 473
Gwinner E → Zeman M

Harris-Warrick RM → Johnson BR
Hateren JH van: Three modes of spatiotemporal preprocessing by eyes 583
Hateren JH van → Jansonius NM
Hawryshyn CW → Parkyn DC
Helenius S → Aho A-C
Helversen D von: 'Absolute steepness' of ramps as an essential cue for auditory pattern recognition by a grasshopper (Orthoptera; Acrididae; *Chorthippus biguttulus L.*) 633
Henderson D → Dryer SE
Hofmann MH → Bullock TH
Hofmann M → Zippel HP
Hong S-F → Cymborowski B
Höpp H-P, Alkon DL: Different ionic conductances are modulated during the late receptor potential and the prolonged depolarizing afterpotential in *Hermissenda* type A photoreceptors 47
Horwitz J → Dove S

Jansonius NM, Hateren JH van: On-off units in the first optic chiasm of the blowfly. II. Spatial properties 467
Johnson BR, Peck JH, Harris-Warrick RM: Amine modulation of electrical coupling in the pyloric network of the lobster stomatogastric ganglion 715
Juusola M: Linear and non-linear contrast coding in light-adapted blowfly photoreceptors 511

Karamürsel S → Bullock TH
Kikuchi M → Chiba A
Knaust M → Zippel HP
Kohbara J → Michel WC

Landsman RE: The effects of captivity on the electric organ discharge and plasma hormone levels in *Gnathonemus petersii* (Mormyriformes) 619
Laughlin SB, Weckström M: Fast and slow photoreceptors – a comparative study of the functional diversity of coding and conductances in the Diptera 593
Lehrer M: Why do bees turn back and look? 549
Lehrer M, Wunderli M, Srinivasan MV: Perception of heterochromatic flicker by honeybees: a behavioural study 1
Levy M, Susswein MO, Susswein AJ: Respiratory pumping in *Aplysia fasciata* as part of an integrated defensive response to increases and decreases in seawater concentration 749
Lönnendonker U: Features effective in course control during object fixation by walking Colorado beetles 741
Luan Y → Zippel HP

Maier EJ, Bowmaker JK: Colour vision in the passeriform bird, *Leiothrix lutea:* correlation of visual pigment absorbance and oil droplet transmission with spectral sensitivity 295
Marshall NJ → Cronin TW
McClelland BE → Wilczynski W
McFall-Ngai M → Dove S
Meyer DL → Zippel HP

Michel WC, Kohbara J, Caprio J: Amino acid receptor sites in the facial taste system of the sea catfish *Arius felis* 129
Mogdans J, Schnitzler H-U, Ostwald J: Discrimination of two-wavefront echoes by the big brown bat, *Eptesicus fuscus:* behavioral experiments and receiver simulations 309
Möhl B: The role of proprioception for motor learning in locust flight 325
Morton DW, Chiel HJ: In vivo buccal nerve activity that distinguishes ingestion from rejection can be used to predict behavioral transitions in *Aplysia* 17
Münz H → Claas B

Nagayama T, Newland PL: A sensory map based on velocity threshold of sensory neurones from a chordotonal organ in the tailfan of the crayfish 7
Nagayama T, Sato M: The organization of exteroceptive information from the uropod to ascending interneurones of the crayfish 281
Nagayama T → Newland PL
Narins PM → Christensen-Dalsgaard J
Newland PL, Nagayama T: Parallel processing of proprioceptive information in the terminal abdominal ganglion of the crayfish 389
Newland PL → Nagayama T
Norekian TP: Cerebral neurons underlying prey capture movements in the pteropod mollusc, *Clione limacina.* II. Afterdischarges 171
Norekian TP, Satterlie RA: Cerebral neurons underlying prey capture movements in the pteropod mollusc, *Clione limacina.* I. Physiology, morphology 153
Northcutt RG, Bleckmann H: Pit organs in axolotls: a second class of lateral line neuromasts 439
Núñez J → Varjú D

Olesen Larsen L → Aho A-C
Ostwald J → Mogdans J
Ottaviani F → Grassi S

Parkyn DC, Hawryshyn CW: Polarized-light sensitivity in rainbow trout (*Oncorhynchus mykiss*): characterization from multi-unit responses in the optic nerve 493
Peck JH → Johnson BR
Phillips JB, Sayeed O: Wavelength-dependent effects of light on magnetic compass orientation in *Drosophila melanogaster* 303
Pitman RM → David JA
Pollack GD: Some comments on the proposed perception of phase and nanosecond time disparities by echolocating bats 523
Preiss R, Spork P: Flight-phase and visual-field related optomotor yaw responses in gregarious desert locusts during tethered flight 733
Provencio I. → Foster RG

Rand AS → Wilczynski W
Rasnow B, Assad C, Bower JM: Phase and amplitude maps of the electric organ discharge of the weakly electric fish, *Apteronotus leptorhynchus* 481
Rathmayer W → Schmidt J
Reuter T → Aho A-C
Riede K: Prepulse inhibition of the startle reaction in the locust *Locusta migratoria* (Insecta: Orthoptera: Acridoidea) 351
Rose GJ → Canfield JG

Sato M → Nagayama T
Satterlie RA → Norekian TP
Saunders DS → Cymborowski B
Sayeed O → Phillips JB
Schaeffel F → Weiss S
Schmid-Hempel P: On optimality, physiology and honeybees – a reply to Varjú and Núñez 251
Schmidt J, Rathmayer W: Central organization of common inhibitory motoneurons in the locust: role of afferent signals from leg mechanoreceptors 447
Schmitt A, Friedel T, Barth FG: Importance of pause between spider courtship vibrations and general problems using synthetic stimuli in behavioural studies 707
Schnitzler H-U → Mogdans J
Serafini G → Grassi S
Simmons AM, Ferragamo M.: Periodicity extraction in the anuran auditory nerve. I. "Pitch-shift" effects 57
Simmons JA: Evidence for perception of fine echo delay and phase by the FM bat, *Eptesicus fuscus* 533
Spork P → Preiss R
Srinivasan MV → Lehrer M
Susswein AJ → Levy M
Susswein MO → Levy M

Tazaki K: Motor pattern generation of the posterior cardiac plate-pyloric system in the stomatogastric ganglion of the mantis shrimp *Squilla oratoria* 369
Tomioka K: Analysis of coupling between optic lobe circadian pacemakers in the cricket *Gryllus bimaculatus* 401

Vallet AM, Coles JA: The perception of small objects by the drone honeybee 183
Varjú D, Núñez J: Energy balance versus information exchange in foraging honeybees 257
Voigt R → Zippel HP

Weckström M → Laughlin SB
Wehner R → Collett TS
Weiss S, Schaeffel F: Diurnal growth rhythms in the chicken eye: relation to myopia development and retinal dopamine levels 263
Wilczynski W, McClelland BE, Rand AS: Acoustic, auditory, and morphological divergence in three species of neotropical frog 425
Wunderli M → Lehrer M

Zeil J: Orientation flights of solitary wasps (*Cerceris;* Sphecidae; Hymenoptera). I. Description of flight 189
Zeil J: Orientation flights of solitary wasps (*Cerceris;* Sphecidae; Hymenoptera). II. Similarities between orientation and return flights and the use of motion parallax 207
Zelick R → Bleckmann H
Zeman M, Gwinner E: Ontogeny of the rhythmic melatonin production in a precocial and an altricial bird, the Japanese quail and the European starling 333
Zeman S → Zippel HP
Zippel HP, Hofmann M, Meyer DL, Zeman S: Functional and morphological regeneration of olfactory tracts and subtracts in goldfish 91
Zippel HP, Voigt R, Knaust M, Luan Y: Spontaneous behaviour, training and discrimination training in goldfish using chemosensory stimuli 81

Editors note 249

Indexed in *Current Contents*